ICS 03.080.01
CCS A 02

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 44142-2024

Central kitchen - Construction requirements

中央厨房 建设要求

Issued on: June 29, 2024 **Implemented on: October 1, 2024**

Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC

Table of Contents

3 Terms and definitions

3.1 central kitchen: a business entity set up by a food business operator, holding its own premises and facilities and equipment, that centrally completes the preparation of finished or semi-finished food and delivers it to the chain outlets of the same organisation, which prepare it further before supplying it to consumers.

3.2 food processing site: the buildings and grounds used for processing and handling food, together with other buildings and grounds managed in the same way. 3.3 food handling area: the places where food is stored, sorted, processed including cooking, portioned and inspected, and where tableware is washed, disinfected and kept clean.

3.4 auxiliary area: offices, changing areas, entrance halls, lobby rest areas, toilets, non-food stores and other areas where food is not directly handled. 3.5 other supporting area: rooms for power, distribution, maintenance, air conditioning and refrigeration plant, and harmless treatment of waste.

3.6 cleaning work area: the processing area with the higher cleanliness requirement, set up to keep food from being contaminated. 3.7 quasi-cleaning work area: the processing area whose cleanliness requirement comes below that of the cleaning work area. 3.8 commonly work area: the areas where other food and tableware are handled.

3.9 specialized zone: the dedicated operating room, set apart by partition, with a higher cleanliness requirement, for processing food that is eaten directly, set up to keep food from being contaminated.

3.10 semi-finished product: food not eaten directly, obtained after preliminary or partial processing of raw material and still needing further processing. A note excludes stored food that has already been processed into a finished product.

4 Site selection and general layout requirements

4.1 Site selection shall comply with the rules on planning, environmental protection and fire safety and with the site selection provisions of GB 31654. The site shall have dry ground, water supply and drainage, and electricity and gas supply, and the prevailing wind direction shall be taken into account.

Areas readily subject to contamination shall not be chosen, and there shall be no place nearby where pests could breed in numbers. The site shall be more than 25 metres from sources of pollution such as manure pits, sewage ponds, open refuse grounds or stations and dry latrines, and outside the range of influence of dust, harmful gases, radioactive substances and other diffusing sources of pollution.

Within the reach of the logistics network, joint operation and construction with a food industry park or industrial cluster is recommended, so that resources are shared. Layout should be planned around the consumer market and the reach of the business, so that the freshness and taste of the dishes or food are kept.

4.2.1 General plan layout shall be market-led and shall follow the principle of moderate scale, economy and practicality, and moderate provision for the future, with scale, format, process, capacity and logistics settled in the light of the production and sales model and the regional industrial chain. An independent plant area is recommended, with the functional areas laid out clearly and separated or partitioned so that cross-contamination is prevented. The plant is usually divided into a processing zone, a living zone and other supporting areas, the processing zone comprising the food handling area and the auxiliary area.

Wind direction, natural lighting and the degree of pollution shall all be considered. The processing zone should be placed downwind of the summer minimum frequency wind direction and kept at a suitable distance from, or partitioned off from, the living zone. Boilers, sewage treatment and similar plant shall be placed upwind of the annual minimum frequency wind direction of the adjoining workshops and kept away from the processing zone. Provided the main works still function, heavily polluting facilities shall be kept away from non-polluting ones, high-noise workshops separated from low-noise ones, and dust-producing workshops separated from the rest or given a sanitary protection green belt.

4.2.2 Road design. The plant entrances and exits and the transport volume of raw materials and finished products shall be settled from the planned area and the capacity of the central kitchen, and the transport routes planned accordingly. More than one external entrance is recommended, with incoming raw materials and outgoing finished products preferably using different routes and different gates. Enough parking area and a ring fire access road shall be provided to meet transport and fire requirements. Roads inside the plant shall be paved with concrete, asphalt or another hard material.

5 Requirements for the arrangement of areas in the processing zone

5.1.1 A central kitchen should hold at least the following functions: production and processing, low-temperature storage, washing and disinfection, unified packaging, delivery and transport, inspection and testing, and information handling.

5.1.2 The process design shall give a sound production flow and shall be hygienic and safe, energy-saving and efficient, and disciplined and practical.

5.1.3 Plan zoning. The food processing site shall suit the variety and quantity of the products and the work areas shall be laid out and divided according to the production process. The processing areas shall be laid out in the order of raw material entry, raw material handling, semi-finished processing, cooking, cooling, food portioning and storage of food awaiting delivery, the handling flow running one way from raw to cooked, so that cross-contamination during storage and operation is prevented.

Separate routes and openings shall be provided for raw materials, for finished products, for the return of used tableware, and for the removal of waste. Where they cannot be separated, raw materials, finished products and used tableware shall be moved at different times, or the finished products shall be covered in a way that prevents contamination. Each area shall be strictly zoned by temperature according to the processing and storage requirements, and automatic temperature recording with an over-temperature alarm is recommended.

5.2.1 Food handling area. The area of the processing and storage sites shall suit the variety and quantity of the products and the process equipment. Work areas shall be laid out and divided by process and cleanliness requirement and effectively separated or partitioned, usually into a commonly work area, a quasi-cleaning work area and a cleaning work area, in rising order of cleanliness; the commonly work area shall be partitioned from the other work areas.

Current fire and safety operating rules shall be met, and every internal operating area shall have at least two safe escape exits. Stores suited to the quantity and storage requirements of the products shall be provided, with freezer and chiller rooms where needed, cold store design complying with GB 50072. Where perishable food that is eaten directly is cooled, portioned or cut, a corresponding specialized zone shall be provided for each operation, complying with the provisions of GB 31654 on specialized zones. An independent room, area or facility shall be provided for cleaning tools; the area or facility used for cleaning-tool storage shall not contaminate food and shall be clearly marked. An inspection room suited to the products shall be provided, placed in the cleaning work area and preferably standing on its own.

5.2.2 Auxiliary area. A changing place and an air shower or air curtain shall be provided at the entrance to the food handling area, and a second changing room at the entrance to the

cleaning work area, preferably in a separate compartment fitted with disinfection facilities. Toilets shall be in the auxiliary area and their entrances shall not open directly into the food handling area. Toilets shall have their own exhaust, whose outlet shall not face the food handling area, and their drainage shall be separate from that of the food handling area, with an anti-odour water seal.

6 Main construction requirements

6.1 Buildings and structure. The main food processing building should use a large-space, long-span column grid. Where it is built on several floors, the floor loading capacity shall be met and vibration reduction provided, and processing areas that give off heat or harmful gases shall be placed on the top floor. Production equipment producing much noise and vibration shall be installed in a single-storey building or on the ground floor of a multi-storey building, with vibration and noise isolation where needed.

Where a steel structure is chosen for the main frame, the long-term corrosive action of steam and damp shall be fully considered and fire protection provided. Storey height is affected by span, production process and equipment size: in a conversion the clear internal height of the processing zone should be not less than 2.5 metres, in a new build not less than 3.0 metres, and the column spacing not less than 6.0 metres. Movement joints should not cross the cleaning work area or the store area, and air ducts and water, electrical and refrigeration lines should be concealed.

6.1.3 Building materials. Internal partition materials shall meet requirements for insulation, heat resistance, fire, damp, dust and corrosion. The floor of the processing zone shall be watertight, leak-proof, corrosion-resistant, impact-resistant and non-slip and shall favour drainage and cleaning.

6.1.4 Fire safety and escape. Because the internal circulation of a central kitchen is complex and largely enclosed and open flames are present, the fire hazard category of the food handling area should be not lower than category C and the fire resistance grade not lower than grade two. Where the store area is large it should form its own zone and fire compartment at the necessary fire separation distance from the processing area, and processing places with open flames should be formed into a separate fire compartment by fire doors and windows. Every room or area of the processing workshop shall allow quick escape to the outside in an emergency, the width of exits and passages meeting fire escape and production requirements; an escape exit fitted with access control for production reasons shall use a push-bar door that opens outward in an emergency.

6.2 Interior finishes. Wet floors shall have floor drains or open channels; the grating fitted at the drain outlet should be metal and its slots or mesh shall be smaller than 10 millimetres. Areas of the workshop with much solid waste shall have a residue settling tank. The floor of the food handling area should be laid as a continuous waterproof floor, in material that is non-toxic, odourless, impervious and corrosion-resistant, flat and non-slip, free of cracks,